1. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-54}{-18x-36}+1=\frac{-54}{-18x-36}$$

A. $x_1 \in [-2,-1]$ and $x_2 \in [-3,-1]$

B. All solutions lead to invalid or complex values in the equation.

C. $x \in [0,3]$

D. $x_1 \in [-2,-1]$ and $x_2 \in [1,4]$

E. $x \in [-3.0,-1.0]$

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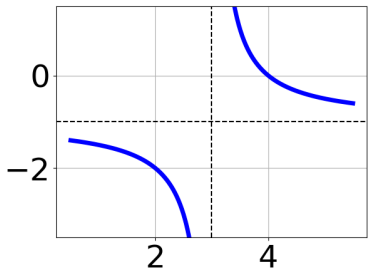
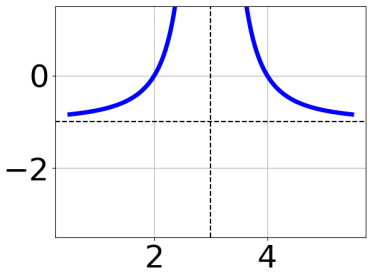
2. Choose the graph of the equation below.

$$f(x)=\frac{1}{x-3}-1$$

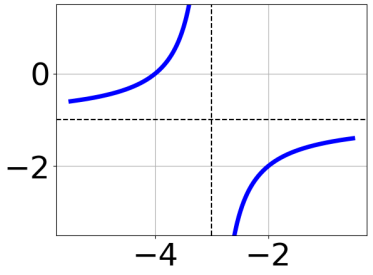
A.



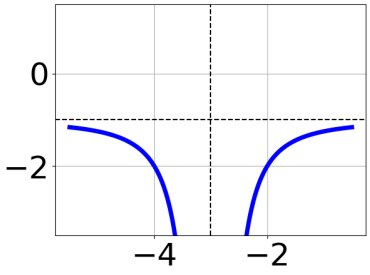
C.



B.



D.



E. None of the above.

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3. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{7x}{2x-4}+\frac{-5x^2}{8x^2-20x+8}=\frac{4}{4x-2}$$

A. All solutions lead to invalid or complex values in the equation.

B. $x_1 \in [1.95, 3.73]$ and $x_2 \in [0.46, 0.75]$

C. $x \in [0.03, 1.35]$

D. $x \in [1.95, 3.73]$

E. $x_1 \in [-1.93, -0.13]$ and $x_2 \in [0.71, 1.15]$

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4. Determine the domain of the function below.

$$f(x) = \frac{3}{18x^2 + 30x + 12}$$

A. All Real numbers except $x = a$, where $a \in [-1.93, -0.86]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.93, -0.86]$ and $b \in [-0.77, -0.49]$

C. All Real numbers.

D. All Real numbers except $x = a$, where $a \in [-24.6, -23.08]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-24.6, -23.08]$ and $b \in [-9.56, -8.05]$

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5. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{7}{-6x + 9} + 3 = \frac{-8}{-18x + 27}$$

A. $x_1 \in [-2.96, 1.04]$ and $x_2 \in [1.98, 2.19]$

B. $x_1 \in [0.04, 4.04]$ and $x_2 \in [2.32, 2.41]$

C. $x \in [-2.96, 1.04]$

D. All solutions lead to invalid or complex values in the equation.

E. $x \in [2.04, 3.04]$

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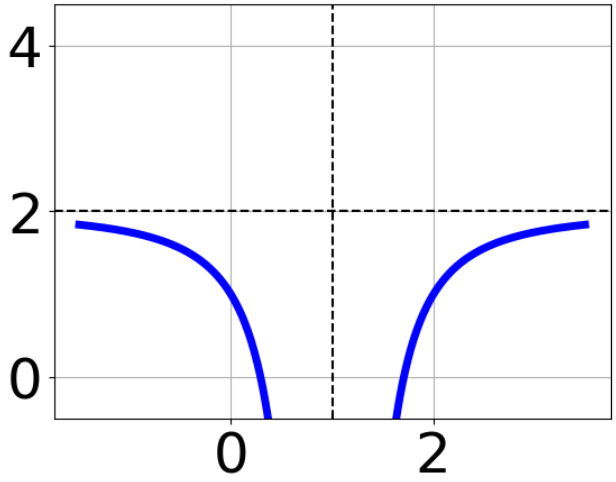
6. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{1}{(x+1)^2} + 4$

B. $f(x) = \dfrac{-1}{x-1} + 4$

C. $f(x) = \dfrac{-1}{(x-1)^2} + 4$

D. $f(x) = \dfrac{1}{x+1} + 4$

E. None of the above

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7. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{6x}{7x+6} + \frac{-3x^2}{49x^2+70x+24} = \frac{-2}{7x+4}$$

A. $x \in [-0.9, -0.81]$

B. All solutions lead to invalid or complex values in the equation.

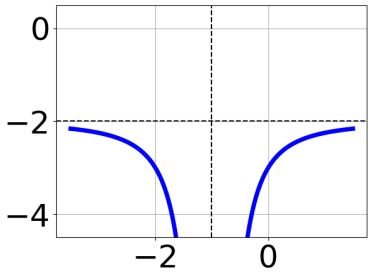
C. $x_1 \in [-0.9, -0.81]$ and $x_2 \in [-0.6, -0.54]$

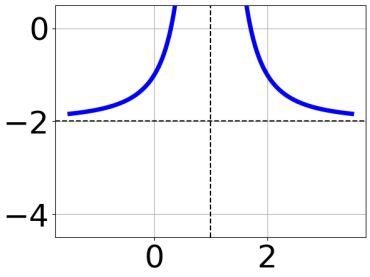
D. $x \in [-0.64, -0.57]$

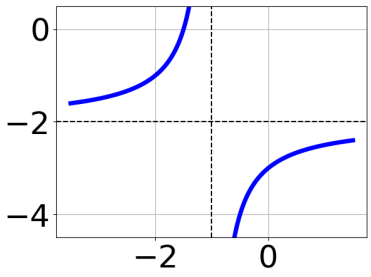
E. $x_1 \in [-0.8, -0.64]$ and $x_2 \in [-0.27, 0.37]$

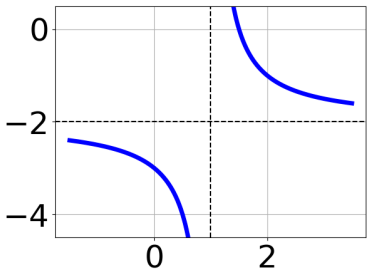
8. Choose the graph of the equation below.

$$f(x) = \frac{-1}{(x+1)^2} - 2$$

A. 

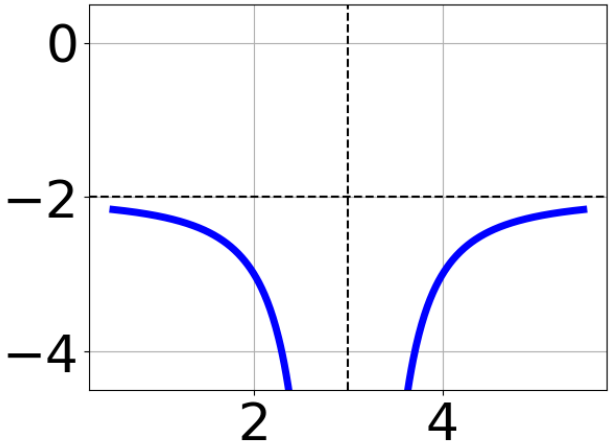
C. 

B. 

D. 

E. None of the above.

9. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{-1}{x-3} - 2$

B. $f(x) = \dfrac{-1}{(x-3)^2} - 2$

C. $f(x) = \dfrac{1}{x+3} - 2$

D. $f(x) = \dfrac{1}{(x+3)^2} - 2$

E. None of the above

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10. Determine the domain of the function below.

$$f(x) = \frac{4}{12x^2 + 36x + 24}$$

A. All Real numbers except $x = a,$ where $a \in [-2.16, -1.71]$

B. All Real numbers except $x = a$ and $x = b,$ where $a \in [-18.94, -17.83]$ and b $[-16.27, -15.21]$

C. All Real numbers except $x = a,$ where $a \in [-18.94, -17.83]$

D. All Real numbers.

E. All Real numbers except $x = a$ and $x = b,$ where $a \in [-2.16, -1.71]$ and $b \in$ $[-1.38, -0.25]$
